

of sporodochium more highly magnified, showing mass of loose spores and scurfy matter on top, sparingly mixed with the characteristic hairs; 4, a group of basidia with the hairs highly magnified; 6, a branching basidium and loose spores very highly magnified. 7, *Macrosporium puccinioides* Ell. and Anders., on dead stems of *Bigelovia* (?) Montana, Kelsey, slightly magnified; 8, a group of forming and young spores rising from the interwoven threads forming the substratum of the sporodochium; 9, a cluster of mature spores; 10, two mature spores showing the stipitate base; 11, three young spores, showing the remarkable resemblance to *Puccinia* spores. 12, *Pestalozziella Andersoni* Ell. and Evrht., natural size on small leaf of *Apocynum cannabinum*; 13, vertical section through a leaf showing the destructiveness of the fungus; highly magnified; 14, five spores more highly magnified.

A key to the North American genera of the Labiatae.

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While the keys to this group in Gray's Manual and in other botanies are praiseworthy in many respects, they are not adapted to use in the field, unless that use is to be limited to those who have become experts. To the beginner and the amateur they are disheartening. The following compilation from the Synoptical Flora is in reality Professor Gray's alone; all that I have done is to attempt to use only the more obvious characters that will lead to the genera in the most direct way. That even so limited a paper as this is free from errors is not expected. Notice of blunders will be gladly received from those that may try to use the key.

- I. Ovary merely 4-lobed, not deeply 4-parted (A).
- II. Ovary deeply 4-parted (B).
- III. Ovary deeply 5-lobed; corolla almost regular, 5-parted, blue
 *Isanthus*, 3.
 - A Stamens exserted from the cleft in the upper lip of the corolla (b).
 - A Stamens not exserted from the cleft in the upper lip of the obscurely bilabiate corolla (a).
 - a Calyx deeply 5-cleft, regular, lobes lanceolate, twice as long as the turbinate tube; corolla nearly salverform. . . . *Tetraclea*, 1.
 - a Calyx barely 5-cleft; corolla tube narrow; filaments long exserted. . . . *Trichostema*, 2.
 - b Corolla upper lip deeply cleft, the lower declined, lateral lobes united to it. . . . *Teucrium*, 4.
 - b Corolla upper lip short, truncate; lower lip large, middle lobe emarginate or 2-cleft. . . . *Ajuga*, 5.

- B Stamens declined toward or resting on the lower lip (C).
- B Stamens not declined (D).
- C Disk enlarged into glands; posterior calyx teeth broad, with decurrent often wing-like margins. . . . *Ocimum*, 6.
- C Disk entire or with an anterior gland; calyx not as above. . . . *Hyptis*, 7.
- D Corolla upper lip not galeate, sometimes slightly concave (E).
- D Corolla upper lip galeate or concave (1).
- E Corolla not strongly bilabiate (F).
- E Corolla bilabiate; fertile stamens 2 only (V).
- E Corolla bilabiate; fertile stamens 4 (Y).
- F Corolla lower lobe large, pendent, fimbriate; stamens straight, long, divergent. . . . *Collinsonia*, 8.
- F Corolla lower lobe spreading, 3-cleft, no bearded ring within (H).
- F Corolla about equally 4-lobed, hardly irregular; stamens erect (G).
- F Corolla tube broad, lobes 5, broad, plane, rather erect; stamens 4, distant. . . . *Sphaecela*, 27.
- G Fertile stamens 4. . . . *Mentha*, 9.
- G Fertile stamens 2; upper corolla lobe entire. . . . *Lycopus*, 10.
- H Stamens distant, straight, never convergent nor curved (I).
- H Stamens ascending or arcuate, often converging or parallel (M).
- I Fertile stamens 2 only; calyx equally 5-toothed, throat very villous. . . . *Cunila*, 11.
- I Fertile stamens 4; calyx throat naked (J).
- I Fertile stamens 4; calyx throat bearded (L).
- J Corolla upper lip entire or slightly emarginate (K).
- J Corolla upper lip 2-cleft, all the lobes narrow, plane. . . . *Monardella*, 14.
- K Anther cells linear, divaricate. . . . *Hyssopus*, 12.
- K Anther cells parallel. . . . *Pyenanthemum*, 13.
- L Flowers imbricated with broad, colored bracts. . . . *Origanum*, 15.
- L Flowers scattered or crowded, bracts inconspicuous. . . . *Thymus*, 16.
- M Calyx campanulate or short; corolla tube short, or not exceeding the bracts; fertile stamens 4; calyx about 10-nerved, throat naked. . . . *Satureia*, 17.
- M Calyx various, 12 to 15-nerved (N).
- N Upper corolla lip plane or slightly concave and straight (O).
- N Upper corolla lip concave, erect, straight or a little incurved; calyx 15-nerved (U).
- O Style beardless (P).
- O Style villous, sometimes sparingly so; stamens sometimes 2 only (T).

- P Stamens 4 (Q).
- P Stamens 2 (S).
- Q Stamens arcuate, shorter than the corolla; calyx about equally 5-toothed.... *Micromeria*, 18.
- Q Stamens ascending under the upper lip (R).
- R Corolla tube straight, mostly exceeding the calyx; throat commonly enlarged.... *Calamintha*, 19.
- R Corolla tube straight, bent backward at the throat, ringent, shorter than the calyx; leaves linear, margins revolute.... *Conradina*, 21.
- R Corolla tube declined at base, then ascending, included in the calyx; leaves ovate, serrate.... *Melissa*, 20.
- S Fruticulose and canescent; calyx-terete and regular; equally 5-toothed or nearly so; corolla mostly with a hairy ring within.... *Poliomintha*, 22.
- S Low herbs; calyx usually gibbous, more or less bilabiate or unequally 5-toothed; corolla tube naked.... *Hedeoma*, 23.
- T Calyx deeply and unequally 5-cleft, campanulate or turbinate, ciliate, throat naked.... *Pogogyne*, 24.
- T Calyx bilabiate, nearly terete, throat villous; leaves linear, entire.... *Ceranthera*, 25.
- U Calyx bilabiate, throat naked, teeth acerose-spinulose; stamens inserted high in the ampliate throat, anther cells 2, divaricate.... *Acanthomintha*, 26.
- V Calyx bilabiate, lower lip 2-cleft (W).
- V Calyx tubular or bilabiate with lower lip 2-toothed (X).
- W Corolla upper lip erect, usually concave; stamens on the throat; connective linear or filiform, transverse on the short mostly horizontal filament.... *Salvia*, 28.
- W Corolla upper lip spreading; filaments exserted, seemingly simple, anthers linear, 1-celled; calyx deeply cleft as if spathaceous, throat naked.... *Aubertia*, 29.
- X Calyx nearly regular, 5-toothed, orifice more or less hirsute.... *Monarda*, 30.
- X Calyx bilabiate, throat naked, teeth subulate.... *Blephilia*, 31.
- Y Anthers not approximate in pairs, the cells parallel (Z).
- Y Anthers more or less approximate in pairs, the cells divergent; filaments not exserted (ZZ).
- Z Stamens divergent or distant, exserted.... *Lophanthus*, 32.
- Z Stamens parallel, ascending.... *Cedronella*, 33.
- ZZ Calyx about equally 5-toothed, throat more or less oblique.... *Nepeta*, 34.
- ZZ Calyx upper tooth much larger than the others, throat equal.... *Dracocephalus*, 35.

- 1 Calyx with a dorsal crest-like projection....*Scutellaria*, 36.
- 1 Calyx without a dorsal projection (2)
- 2 Calyx globular or oblong, barely repand-bilabiate....*Salizaria*, 37.
- 2 Calyx deeply bilabiate (3)
- 2 Calyx not bilabiate, 3 to 5-lobed (4).
- 2 Calyx not bilabiate, 5 to 10-toothed (5)
- 3 Filaments of the upper pair 2-toothed at apex, one tooth naked, the other bearing the divaricate-celled anther....*Brunella*, 38.
- 3 Filaments simple....*Brazoria*, 39.
- 4 Calyx sub-regular, equally 5-toothed; flowers simply opposite in the spikes, one under each bract....*Physostegia*, 40.
- 4 Calyx tubular-campanulate, 3-lobed; inflorescence terminal and capitate, 2 or 3 flowers under each bract....*Macbridea*, 41.
- 4 Calyx campanulate, inflated, deeply 4-cleft; inflorescence simply and loosely leafy-spicate....*Synandra*, 42.
- 5 Stamens included in the short tube, upper lip merely concave; calyx strongly ribbed, teeth 5 to 10, subulate or spinulose; leaves rugose....*Marrubium*, 43.
- 5 Stamens ascending beneath the galeate upper lip (6).
- 6 Stamens not deflexed after anthesis (7).
- 6 Stamens deflexed to the sides of the throat or contorted after anthesis (10).
- 7 Calyx turbinate or tubular-campanulate, commonly oblique, filaments not appendaged (9).
- 7 Calyx tubular (8).
- 7 Calyx funnelform-dilated at the throat; filaments not appendaged....*Ballota*, 44.
- 8 Corolla upper lip strongly galeate; upper pair of stamens appendaged at base....*Phlomis*, 45.
- 8 Corolla upper lip erect, or incurved and elongate entire; filaments not appendaged....*Leonotis*, 46.
- 9 Leaves cleft or incised, veiny, all longer than the capitate-vericillastrate flowers....*Leonurus*, 47.
- 9 Leaves mostly cordate....*Lamium*, 48.
- 9 Leaves ovate or oblong-lanceolate; inner valve of each anther-cell hirsute, the other larger, naked....*Galeopsis*, 49.
- 10 Calyx tubular-campanulate; corolla tube cylindrical, throat not dilated, upper lip erect....*Stachys*, 50.

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